



Thank you for choosing EMM Labs...

Welcome	002
Table of Contents	003
Safety Instructions	004
Information To The User	005
Warranty	006
XDS1 CD/SACD PLAYER	007
Features & Specifications	008
Front Panel & Functions	010
Rear Panel & Functions	012
Infrared Remote Control	014
Appendix A - Serial Remote Control (RS232)	016

Safety Instructions

Prior to installing your new EMM Labs product please read the following safety instructions:

- Read and follow all instructions.
- Keep these instructions.
- Do not use or install product near any sources of water, rain and/or moisture.
- Clean using only a dry cloth.
- Install only in accordance with the manufacturer's instructions.
- Refer all servicing to approved service personnel.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not install product outdoors or in direct sunlight.
- Leave at least 10cm or 4 inches around product to ensure proper ventilation.
- Do not place product near strong electrical or magnetic radiation/emissions or near a power amplifier.

This EMM Labs product must be connected to a mains socket outlet with a protective earthing connection (grounding pin).

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO WATER OR MOISTURE.

EEC: This product has been designed and tested to comply with the limits set out in EN55013, EN55020 and EN 60065:2009 (electrical safety).



CAUTION

This product is a Class 1 laser product, but this product contains a laser diode higher than Class 1. To ensure continued safety do not remove any covers or attempt to gain access to the inside of the product. Refer all servicing to qualified personnel. The following caution label appears on your unit on the rear panel:



CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure. The use of optical instruments with this product will increase eye hazard.

Information To The User

Alteration or modification carried out without appropriate approval may invalidate the user's right to operate the equipment.

Warranty

EMM Labs warrants the XDS1 product against defects in material and workmanship under normal use and service for a period of time specified by the product's serial number from the date of first delivery to the owner. The warranty time period is 1 year for the drive unit and associated drive electronics. 5 years for all other parts. Warranty is limited to the original owner and is non-transferable.

EMM Labs will pay for return shipping charges back to the owner when the product is sent to EMM Labs within the first 90 days after purchase (US and Canada end-users only). Otherwise, owner will be responsible for all shipping charges to and from EMM Labs.

For all warranty claims, a copy of the original invoice must accompany the product.

Opening the product or modifying it in any way by the owner, including but not limited to cryogenic treatment, will void any warranty.

Please contact EMM Labs (support@emmlabs.com) for RMA number and shipping instructions before shipping any product to EMM Labs.

EMM Labs products are sold worldwide through authorized dealers with restricted territories. EMM Labs product purchased from non-authorized dealers or from a dealer selling outside his / her authorized territory will automatically void product warranty.

XDS1 CD/SACD PLAYER

The XDS1 is EMM Lab's multi-format high performance digital player for CD and stereo SACD. It has evolved from EMM Labs acclaimed converter and transport systems which are used worldwide in professional studios to create some of the finest recordings.

The XDS1 is also EMM Lab's first player that can also act as a stand alone reference converter for other digital sources using its built in AES and TOSLINK interfaces.

The XDS1 has EMM Lab's:

- New 4th Generation modular MDAT algorithm to up-sample and condition digital audio to twice the SACD/DSD sample rate.
- New MCLK modular reference master clock.
- New X-Drive metal drive system.
- New X-Power power system.
- MFAST technology that gets rid of digital source jitter.

The XDS1 is the culmination of years of research and development resulting in EMM Labs finest all in one CD/SACD player to date.

Features & Specifications

Supported disc formats:

- Redbook CD
- Stereo SACD

Analog Outputs:

- Balanced (XLR)
 - Output Line Level (0dBfs signal on AES/EBU input): 5V
 - Output Impedance: 300Ω
- Un-Balanced (RCA)
 - Output Line Level (0dBfs signal on AES/EBU input): 2.5V
 - Output Impedance: 150Ω

Digital Inputs:

- Up to 24bit wordlength on all digital inputs
- AES/EBU PCM (44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz)
- TOSLINK PCM (44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz)

Digital Outputs:

- AES/EBU (XLR) PCM digital audio output for CD only
- EMM Labs OptiLink

System:

- System control via serial RS-232
- USB data port for firmware upgrades (see separate USB update instructions)

Features & Specifications

Power supply

- Power factor corrected
- Factory set to 100V or 115V or 230V, 50/60Hz operation
- Power consumption: 45W

General

- Dimensions W x D x H: 435 x 400 x 145mm
- Weight: 17kg

Front Panel & Functions

1. *Standby/Power-Save button:*

Toggles the operation between on and power-save mode. In power save mode the remote control and all front panel functions become inactive.

2. *XDS1 drive Tray*3. *XDS1 Display:*

Display can be dimmed or turned off using the the remote DISC button.

4. *XDS1 Front Panel Buttons and Indicators:*

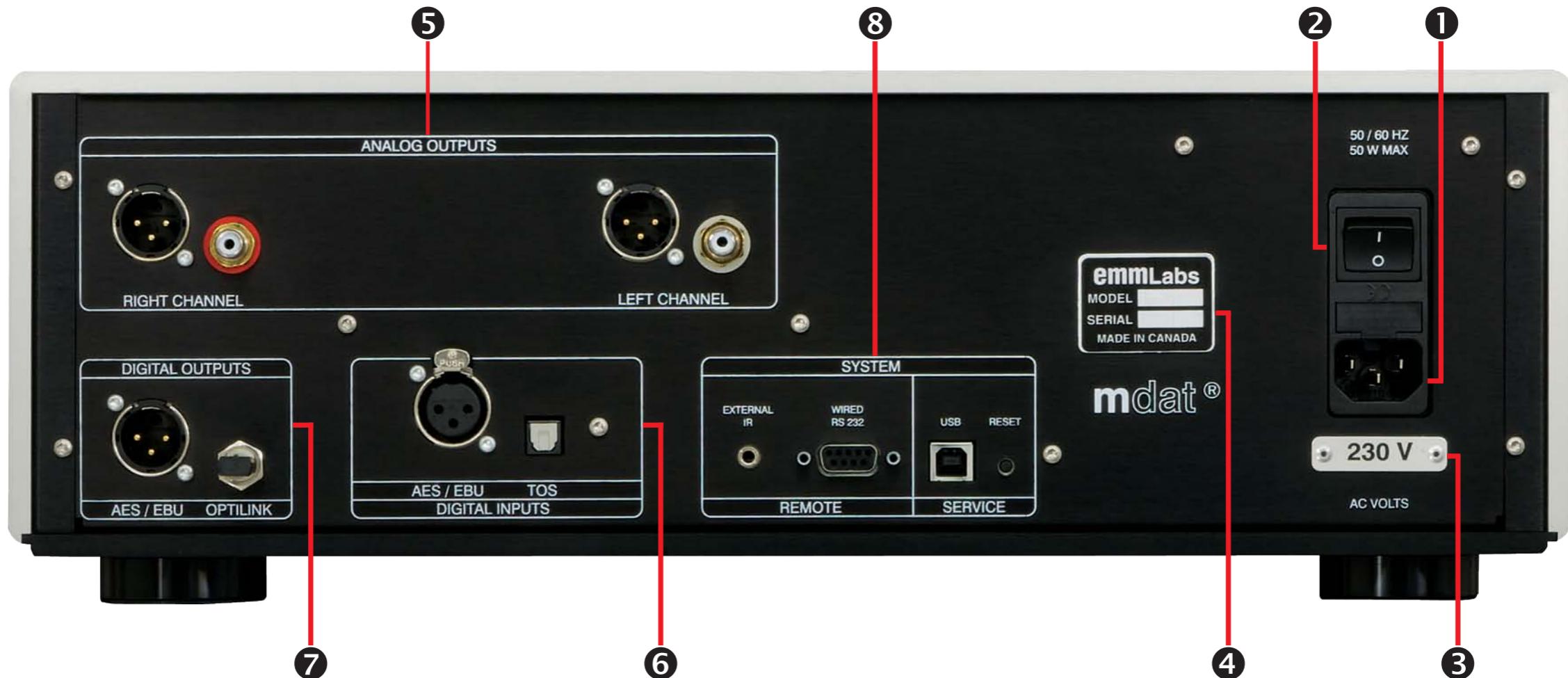
- **S** -> SOURCE: Toggles between CD/SACD playback, AES and TOSLINK PCM inputs.

Front Panel & Functions

4. XDS1 Front Panel Buttons and Indicators (cont'd):

- / -> EJECT/STOP: Stops playback. Pressing stop a second time or when the drive is already in stop mode ejects the tray.
- -> MODE: To switch between the SACD and CD layers of a hybrid SACD. Works only when the drive is in stop mode.
- / -> PLAY/PAUSE: Starts or Pauses playback.
- -> PHASE: Toggles polarity inversion that is performed in the digital domain.
- -> ALT: Function is only for machine service/diagnostic. Disabled.
- -> REPEAT: This button toggles through 3 states:
 - Repeat Track – repeats current track
 - Repeat All – repeats entire disc
 - Repeat Off - turns repeat function off
- -> PREVIOUS: Jumps back a track. Press and hold to enter fast rewind mode. In this mode pressing the PREVIOUS button immediately a second and third time causes the rewind speed to increase. To exit press PLAY.
- -> NEXT: Jumps ahead a track. Press and hold to enter fast forward mode. In this mode pressing the NEXT button immediately a second and third time causes the forward speed to increase. To exit press PLAY.

Rear Panel & Functions



1. *Main Power connector and fuse holder*
2. *Main Power Switch*
3. *Product VOLTAGE indicator:*
Indicates working voltage of the XDS1. Only use with indicated line voltage.
4. *Product model and serial number indicator:*
Warranty void if model/serial number indicator is not attached to unit, missing or damaged whereby serial number cannot be seen.

Rear Panel & Functions

5. Analog Outputs:

- Left and Right Balanced (XLR) Connectors
- Left and Right Un-Balanced (RCA) Connectors

6. Digital Inputs:

- AES/EBU: AES/EBU (XLR) format PCM digital input
- TOSLINK: TOSLINK format PCM digital input

7. Digital Outputs:

- AES/EBU: AES/EBU (XLR) PCM digital audio output for Redbook CD
- EMM Labs OptiLink for interfacing with other EMM Labs products

8. System:

Remote:

- Wired RS232: RS232 control port

Service:

- USB data port for firmware upgrades (see separate USB update instructions)
- RESET button Used to temporarily access the backup firmware. Only for diagnostic purposes. Should not be used during normal operation.

Infrared Remote Control

DISC : This function toggles the front panel display to different preset brightness settings including turning the display off.

INPUT : Toggles between CD/SACD playback, AES and TOSLINK PCM inputs.

Numeric Buttons : These buttons can be used to directly access any track on the CD or SACD directly. To access tracks higher than 9 see examples:

- Track 10 press and hold 1 until you see the display change to 10 then press 0.
- Track 23 press and hold 2 until you see the display change to 20 then press 3.

MODE : To switch between the SACD and CD layers of a hybrid SACD. Works only when the drive is in stop mode.

REPEAT : This button toggles through 3 states:

- Repeat Track – repeats current track
- Repeat All – repeats entire disc
- Repeat Off - turns repeat function off

PLAY : Starts or Pauses Playback

PAUSE : Pauses or Starts Playback from Pause.

STOP : Stops Playback. Pressing stop a second time or when the drive is already in stop mode ejects the tray.

|<< : Jumps back a track. Press and hold to enter fast rewind mode. In this mode pressing the button immediately a second and third time causes the rewind speed to increase. To exit press PLAY.

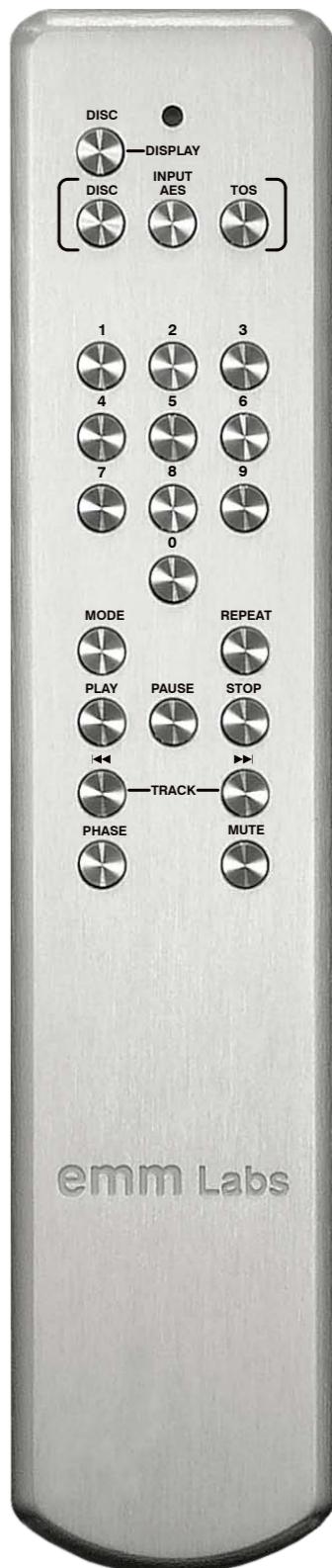


Infrared Remote Control

>>| : Jumps ahead a track. Press and hold to enter fast forward mode. In this mode pressing the button immediatly a second and third time causes the forward speed to increase. To exit press PLAY

PHASE : Toggles polarity inversion performed in the digital domain.

MUTE : Sends the MUTE command to an EMM Product that supports this function i.e. DAC2X.



Serial Remote Control (RS232)

The XDS1 is equipped with a 9-pin RS232 port for system remote control via a serial cable (not provided by EMM Labs). Please use a standard RS232 cable. Do not use a null model cable, as this will not work. RS232 communication port settings:

- 19,200 baud
- 8 bits
- 1 stop bit
- no flow control
- no parity bit

Commands to the XDS1

All commands sent to the XDS1 consist of 3 ASCII characters (all lowercase) followed by a carriage return or <CR>. Repeating a <CR> will repeat the last command sent. Received commands are not stored in a stack. They need to be sent in intervals of at least 50ms to allow enough time for the XDS1 to execute a command before receiving the next one.

Command	Function
ply	Start Playback
pse	Pause Playback
stp	Stop Playback
mod	Toggles through the SACD playback layers. Only works when not playing.
rpt	Toggles through the different repeat modes
nxt	Jumps ahead a track
prv	Jumps back a track

Commands to the XDS1 (cont'd)

Command	Function
dim	Toggles through display brightness settings
try	Tray open and close
tr(x)	tr followed by a single digit (x) to jump to a particular track. See example.
tr(x) example:	
a) Jump to track 5	: tr0<CR>, tr5<CR>
b) Jump to track 12	: tr1<CR>, tr2<CR>
pol	Toggles polarity inversion performed in the digital domain.
src	Toggles between CD/SACD playback, AES and TOSLINK PCM inputs.

Status bytes sent from XDS1

The XDS1 sends back 9 Bytes terminated with a <CR> whenever any status changes.

<Byte 0><Byte 1><Byte 2><Byte 3><Byte 4><Byte 5><Byte 6><Byte 7><Byte 8><CR>

Byte 0 Seconds ones in ASCII

Byte 1 Seconds tens in ASCII

Byte 2 Minutes ones in ASCII

Byte 3 Minutes tens in ASCII

Byte 4 Hours ones in ASCII

Byte 5 Track number ones in ASCII

Byte 6 Track number tens in ASCII

Status bytes sent from XDS1 (cont'd)

Byte 7

- bit 0 - 1 when "Reading" indicator is on (front panel)
- bit 1 - 1 when "Repeat Track" indicator is on(front panel)
- bit 2 - 1 when "Repeat All" indicator is on (front panel)
- bit 3 - 1 when "CD" indicator is on (front panel)
- bit 4 - 1 when "SACD 2CH" indicator is on (front panel)
- bit 5 - 1 when "SACD MCH" indicator is on (front panel)
- bit 6 - Not used
- bit 7 - Not used

Byte 8

- bit 0 - Reserved
- bit 1 - Not used
- bit 2 - Not used
- bit 3 - 1 when "No Disc" indicator is on (front panel)
- bit 4 - 1 when internal clock selected
- bit 5 - Not used
- bit 6 - 1 when in pause
- bit 7 - 1 when clock is locked

Byte 9 <CR> (x0D)